University College London
Faculty of the Built Environment
Bartlett School of Planning

Measuring the Economic Impacts and Value of Home Zones in the UK: Six Case Studies.

Francisco Bosch
MSc Urban Regeneration

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Being a Dissertation submitted to the faculty of the Built Environment as part of the requirements for the award of the MSc Urban Regeneration at the University College London:

I declare that this Dissertation is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

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1. Abstract

This dissertation builds on recent studies which have been trying to understand and measure the economic impacts of urban design and public realm. Their objective is to improve the quality of urban environments by making more efficient use of public and private resources.

Particularly this dissertation looks at Home Zone's projects in the UK. We raise the question about the benefits they accomplish from an economic perspective. Using the information available from the Land Registry and a proposed methodology we estimate the total impact of Home Zones over property prices for six case studies. We then compare this value against their original investments.

From our analysis we observe positive property impacts for half of the projects studied. Anyhow when compared to their initial costs only one of them comes out with positive figures. As such, Home Zones do not seem to be quite an efficient investment for the improvement of the built environment. As a conclusion, we agree with what other evaluations have observed in terms of the need for new approaches on residential street improvement programmes.

Word Count: 10,856

2. Introduction

In the context of public policy urban projects may be justified by diverse reasons. They can pursue economic, social, environmental and/or political objectives. In this same way, public resources spent in urban projects are justified by those objectives. However on a reality built on scarcity of resources the economic perspective of public policy becomes fundamental. This because there is always the question of what is the best way in which to use those resources or what else can be done with them.

Most economic evaluations of public projects are based on cost benefit analysis (CBA). Using price as a common indicator CBA compares for society total costs and benefits of some specific project evaluating efficiency in the use of resources. Of course this isn't that simple because not all costs and benefits of urban projects can be priced (externalities) and because at the end public policy is a matter of ideologies that has to be decided from a political rather than an economic perspective. Anyhow economic analysis helps us analyzing, evaluating and deciding upon public projects from one certain perspective. It is a mean that complements other forms of evaluation giving us a broader understanding of the effects of some project. In fact economic evaluation in societies is one of the fundamental methods of projects assessment and although has been largely criticized it remains a key method for policy evaluation (Judara, 2007).

As a result of this, a great matter of efforts is undertaken in different areas of public policy trying to price social or environmental costs and benefits (Mishan, E., Quah, E., 2007). By doing this it is possible to improve resource allocation and correct what is known in policy as "market failures". This is also the case for urban design and public realm as rarely people express their benefits in monetary terms. Here too there have been increasing attempts to price the values of urban design and public realm. In England one of the strongest contributions has been undertaken by the Commission for Architecture and the Built Environment: CABE Space. Their effort pursues a higher consideration on the quality of the built environment of our cities. A series of studies and reports have been committed to understand the importance of them for society in order to legitimize their funding as public policy. This dissertation pretends to build

from such contribution trying to identify economic impacts of urban design and public realm in cities, in order to estimate their importance for us from an economic perspective.

In particular this dissertation looks at urban projects called Home Zones. These are urban design interventions which transform residential streets from their traditional appearance into new public spaces. By redesigning such public space Home Zones intend to lower cars speed traffic, improve the physical environment (streetscapes), and supply new and safer places for children to play. Home Zones even pursue broader objectives such as creating stronger communities through public participation and urban regeneration by attracting new residential demand to urban decayed areas.

In this sense the objectives of this dissertation are mainly two. First to contribute with researches that try to find methods to measure the economic impacts of urban design and public realm in cities. Second to use this source of knowledge to assess Home Zones projects in England from an economic perspective (CBA). As such this dissertation should complement other existing evaluations for Home Zones which have focused on other aspects such as traffic impacts, environmental improvements or public participation.

As part of these objectives then there are two research questions leading this dissertation: Is it possible to measure the economic impacts of Home Zones projects in the UK? And, what is the value of Home Zones projects in the UK from a cost-benefit analysis perspective?

Trying to answer these questions this dissertation analyzes six Home Zones developed in different parts of England. It proposes a quantitative method to measure such economic impacts of Home Zones over property prices using the information available by the Land Registry. Looking at the evolution of property prices before and after interventions it compares Home Zone's areas with other similar and adjacent ones. To have a broader view of these results we compare them with what other evaluations have estimated and with interviews done to local estate agents of some of the case studies. Finally we compare such impacts with their initial investments undertaking a CBA approach to evaluate the economic value of Home Zones.

The dissertation starts with a literature review about the economic impacts of urban design and public realm. Follows with an overview of Home Zone's development in the UK and previous evaluations that have been undertaken to analyze this policy. Then we present our proposed research methods and describe briefly the six case studies. Then we present our results and finally propose some conclusions.

3. The Economic Impacts of Urban Design as Project Evaluation

3.1 Economic Value of Urban Design

This dissertation builds from the idea that quality in urban design and public realm has some economic impacts on cities and neighborhoods. As a result of this, if measurable, those economic impacts can be used as a complementary way to evaluate urban design projects and policy. This from the economic perspective of cost benefit analysis (CBA). So to take this approach on Home Zone projects we will discuss first the idea that quality in urban design and public realm generates benefits on society, some of which have an economic dimension that can be measured as an exchange value.

Britain's Commission for Architecture and the Built Environment (CABE Space) has been developing during the last years a series of researches and reports trying to find and explain the importance of good quality in urban design and public realm. Their aim is to increase the quality of the built environment. Among different reports, *The Value of Public Space* explains various impacts public realm might produce on cities and neighborhoods. These, not just from and economic perspective, but rather from a broader vision including the social and environmental dimensions. It specifically defines seven different types of benefits. First it explains the economic benefits of public realm in cities and places. As they describe, places value increase when public realm's quality is better as more people will want to live, work or shop in those environments. Second they mention physical and health impacts of public realm in cities as they encourage people to walk do sports or simply enjoy them. Related to this a third value of public realm is that they give children places to play through which they learn to socialize and enjoy their childhood. A Fourth value of public realm mentioned by CABE`s report is the impact it might exert over crime and fear of crime. Better designed streets and public spaces have influences on levels of criminality as might also built a sense of identity and social care over neighborhoods. Public realm has a fifth level of impact which is about creating places for citizens' events, interaction and mutual awareness. Public realm provides the spaces were citizenship is ultimately experienced. Sixth this report refers to the social and environmental impacts of public

realm on movement and mobility. Better public realm and urban design gives better places for walking, cycling and public transport increasing the use of alternative ways of transportation in cities. Finally looking particularly on parks the report mentions the importance of them towards the environment producing places were natural elements and biodiversity can be protected and experienced by everyone (Cabe, 2004).

From a more specific point of view, urban consultants ECOTEC researched the different types of economic impacts public realm might have over cities. This on their report *Economic Impact of Public Realm* developed for the East Midlands Development Agency. In their research ECOTEC makes an overview of different studies which have tried to identify the forms of economic impacts derived from public realm. They finally classify such results in six typologies of economic impacts: attracting investment, attracting visitors, increasing tourism, improving productivity, enhancing image and increasing land and property values. Attracting investments refers to the capability of urban design to trigger processes of investment associated to public realm development or improvements. Quoting CABE's report *The Value of Urban Design* (2001) they mention the awareness among developers on the economic benefits of good quality public realm. This explains why many of them have invested significant amounts of money on improving public spaces on the surroundings of their projects. Attracting visitors refers to the economic influence the quality of public realm might have over retail in commercial avenues and public places. Quoting another CABE's report they mention a research on Coventry were street and urban design improvements increased footfall by even 25% on Saturdays. Related to this, increasing tourism specifically describes the role public realm has in attracting tourist demands on places. Referring to a Central London Partnership research they describe a significant increase in footfall around the London Eye area as a result of riverside improvements. As a consequence of this they explain it has been observed an important economic boost in the surroundings of this area. Improving productivity refers to the economic impact public realm might have over productivity in business areas. Quoting again CABE's report they explain how in Birmingham and Manchester an increase of workforce productivity was observed as a result of an improved environment. Enhancing Image refers to the economic contribution high quality environments might produce on the image and reputation of businesses. "Earlier work by CABE (2001) draws a similar conclusion and finds that occupiers, particularly those with predominantly UK based businesses whose

clients visited frequently, often rate prestige and image as important factors when choosing a place to locate" (Ecotec, 2007 p. 47). Finally increasing land and properties value refers to the specific economic impact public realm might produce over the prices of these assets (Ecotec, 2007). From all these types of impacts this dissertation is particularly concerned about this last one, which is discussed in more detail further on in this chapter.

Having mentioned different benefits urban design and public realm produce on cities and describing specifically the economic dimension of such impacts raises the question about the extents of such values and whether they can be measured. In regards to this issue Ecotec`s report explains the difficulty of such task due to the complexity of variables defining values in cities: "There is such an extensive set of variables to consider when looking at economic impacts that it can be very difficult to accurately assess the role of the public realm in generating benefits" (Ecotec, 2007 p. 39). Within this same argument CABE`s (2001) report explains: "Adding to the complexity is the simple fact that design constitutes just one influence on economic value; location, use, market and usable floor area will also be significant" (Carmona et al, 2001 p. 12). CABE`s report goes further into this problematic explaining that all the economic benefits of better quality urban design and public realm are hardly to be measured as money value:

...market prices are poor indicators of the value of many collective public benefits since their key feature consists of externalities which are not taken into account in the price for which the goods are sold. Thus, for example, the social benefits of a high quality public realm and the productivity gains arising from well designed urban spaces and workplaces occur in the form of externalities. This is a distinctive characteristic of 'public goods' that have no immediately identifiable monetary exchange value and are therefore not usually considered important by the market. Such goods can easily be undervalued in public and private investment decisions. Yet their true value can be much greater than the supply price or the cost incurred in making them available. (Carmona et al., 2001 p. 15).

In spite of these facts, these reports and other researches have yet anyhow tried to understand and measure the economic impacts of urban design and public realm

projects due to the importance it has in terms of resource allocation and public policy. Scarcity implies the needs to make an efficient use of limited resources, obtaining from them the best social return possible. In policy evaluations *Value for Money* is a key concept behind decision making which is far from being obsolete. As the same CABE`s report explains:

Only, it seems, by offering solid evidence that good urban design can deliver better value (social and environmental, but particularly economic) will skeptical minds be turned. By placing better urban design on the positive side of the balance sheet, a change in private as well as public investment decisions might be secured. (Carmona et al., 2001 p. 16.)

So how has it been measured until now the economic impacts of urban design and public realm on cities? And, what has been accomplished? Literature shares to describe two general approaches on this matter: Qualitative and Quantitative measurements. While the first ones are based on interviews and surveys on experts such as state agents, real estate developers and other key stakeholders the second ones are mostly advocate in finding measurable impacts on land and property prices as also on retail sales and business profitability.

Ecotec`s report concludes its literature review with a summary of what has been calculated in terms of public realm economic impacts by other researches. It mentions a study (quoted on CABE`s *The Value of Public Space* described above) which estimates that in the city of Berlin land values rose 17% as a result of tree planting. Also quoting this report it describes parks and waterways affecting property prices in Netherlands up to an 11%. Thirdly it mentions two researches done by authors Garrod and Willis who estimate property values increasing 20% and 19% as a result of landscape and overlooking water respectively. Related to waterside a research by Lamber, Smith and Hampton finds 18% of the value being affected by these features in Milton Keynes and Bedford. From the Brown County Planning Commission, Ecotec describes properties selling faster and with an average of 9% higher next to the Mountain Bay Trail in Wisconsin than in similar areas. Ecotec finally concludes:

Taking this evidence into account, it can be estimated that a good quality natural environment (e.g. woodlands, parks and waterside locations), can increase land values to around 17% and property prices by an average of 15%.(Ecotec, 2007 p. 48)

One of CABE`s latest research in this area is *Paved with Gold, The Real Value of Good Street Design* (2007). Of particular interest for this dissertation this research focuses on streetscape design quality (in commercial avenues) and its economic impacts. Based on quantitative data it tries to find a relation between streetscape design quality and the value of residential properties and shops rents in the area. To assess street design quality the research uses CABE`s PERS (Pedestrian Review Environment System) design quality tool to mark each street analyzed. They then estimate the market potential of each area (in terms of retail rents and house prices) and compare that to observed property transactions. By doing this and having marked the quality of the commercial street environments they are able to estimate the influence urban design quality has on property prices.

The results obtained by this research, although still matter of statistical validation according to their authors, are very interesting. For each point increase in PERS scale on commercial avenues street quality flats in the surrounding area show an increase of 5.2% of their expected price. In this same way for each point increase in PERS scale on commercial avenues street quality shop rents increase in a 4.9% of their expected price (Cabe, 2007).

In conclusion, urban design and public realm exerts several impacts on cities and their citizens. Some of these have a clear economic dimension from which some are possible to be measured. This is the case of property values for which urban design and public realm impacts have been studied by several researches. From streetscapes improvements to large natural attributes (such as lakes or parks...) the economic effects of urban design and public realm seems to affect properties value between a 5% and 15% of their total price.

3.2 Economic Evaluation of Urban Design

Then, how does the economic impact of urban design and public realm becomes a source for project evaluation? In CBA public projects are evaluated in terms of their resource efficiency. By comparing all costs and benefits a specific project produces it is possible to judge upon the social economic returns of such investment. In theory, considering all social and environmental costs and benefits, public policy should prioritize on projects which make a better use of their resources creating more value and increasing the amount of future wealth and resources (Belli ed., 2001).

In the case of Urban Design then all the benefits that we have mentioned at the beginning of this chapter could be compared to their total costs. We specifically consider property prices growth to be a social benefit achieved by Home Zones. Of course there are other benefits that Home Zones might achieve such as traffic reduction, environmental improvements and public participation... But these are hardly to be priced. In stead we assume that all other environmental and social benefits are to some extent expressed in the value of properties. This because people will price their properties according to the benefits they receive from them and will be willing to exchange them at that certain price. As a result of this we might compare the total costs with the total benefits of this project analyzing how much value they create and as such how efficient they are in terms of resource allocation.

Clearly CBA are not comprehensive methods to evaluate urban projects or any public policy. They look at public investment and policies from a very specific perspective: resource efficiency. In the case of urban design however there are different externalities and social benefits which they might produce but we simply can't measure in monetary terms. This is why although its importance in contemporary planning we must take CBA as one form of evaluation which should be complemented with other forms of indicators and evaluation (Miller, D. Patassini, D., 2005). Urban design as any other policy is at the end a matter of political decision.

4. Home Zones in the UK

Researching on the economic impacts of urban design and public realm this dissertation specifically looks at Home Zones projects and their effect on properties value. Before explaining the research methods and introducing our case studies we will describe briefly Home Zones development in the UK and what other evaluations have written about them.

4.1 Brief Overview of Home Zones in the UK

As literature explains (Biddulph, 2001; Gill, 2006), UK`s residential street improvement projects known as Home Zones are based on the Dutch idea: "Woonerfs" (Living Yards). Woonerfs were first designed and implemented in the Netherlands by the early 70`s and have been since then widely spread over many different countries specially in Europe. As Biddulph explains, these are physical redesigns of residential streets which basic idea pursues the redefinition of streets as public spaces rather than just traffic infrastructure provision. The characteristic element of Woonerfs design (although there are some variations) is the development of a unique surface in which cars are obliged to share with pedestrians the same space. "alongside other landscaping and traffic measures, these serve to slow down vehicles, open up road space and create a place suitable for social uses in which the driver feels like a guest" (Gill, 2006 p. 8). Between the 80`s and 90`s Woonerfs were widely adopted in Germany were they were known as "Verkehrsberuhigter Bereich" (Traffic Reduced Speed). These schemes had a strong emphasis on traffic management restricting cars to a maximum speed of 7km/h (Tranter, 1996).

In the UK, the term Home Zones was initially used as a legal initiative proposed in the early 90`s intending to increase car drivers responsibilities on residential streets. It was really at the end of that decade when it actually became the design concept translating Dutch's idea Woonerfs. Promoted by non-governamental organizations Children's Play Council and Transport 2000, Home Zones basically pursued for the UK the same objectives that Woonerfs did in the Netherlands and Verkehrsberuhigter Bereich did in

Germany. In 1999 the Labour government throughout its Transport Research Laboratory (TRL) called local authorities for submission of proposals and finally launched a pilot experience of nine Home Zones projects (8 in England and 1 in Wales). The whole programme considered a total budget of near £500,000 and was shortly followed by other 4 projects in Scotland (Gill, 2006).

It was in April 2001 that Home Zones became more of a national public policy when Prime Minister Tony Blair announced the Home Zone Challenge Fund. With a total budget of £30 million this time the Department for Transport (DFT) managed a programme which resulted in the selection of 61 Home Zone projects all over England. Proposals received on average some £500,000 each having as main selection criteria continuous traffic accidents plus the support and engagement of local residents with the initiative (DFT, 2005a)

Having the Home Zone Challenge project mainly concluded in the year 2005 there has followed no other governmental funding body for the development of new Home Zones. Anyhow other projects have been still developed in England mostly funded and leaded by local authorities with the participation of local residents. There have also been some initiatives carried by regeneration agencies and property developers. According to *Can I Play Out?* a report for London Play, today there must be near 100 schemes already completed in the UK. Among these the levels of design and investment vary widely between different projects. In one extreme some projects consider sophisticated interventions including the typical street shared surface, parking layout redesign, streetscape improvements (materials, plants, signals and lightning) while in the other extreme more simple traffic calming measures are also considered sometimes as Home Zone projects. In fact, from a legal point of view the definition of Home Zones was legally formalized in 2006 and refers simply to residential areas with speed control management, not being required the need of any physical street transformation at all (Gill, 2006). This dissertation anyhow will deal with the spatial understanding of Home Zones assessing the impact of such projects which invested in the physical transformation of residential streets.

4.2 Home Zones Projects Evaluations

There already are several evaluations for Home Zone projects in the UK. Some of them are more comprehensive while others are more focused on specific issues; some of them look at a group of cases while others evaluate specific projects. Probably the most comprehensive and complete report for Home Zones in the UK is DFT's own report on the Challenge Programme: *Challenging the future of our streets* (DFT, 2005a). After describing the programme objectives the report draws on conclusions for traffic impacts, public participation, regeneration, environment, crime, health, and property prices.

According to DFT, Home Zone's main outcome has been delivering stronger communities as a result of actively engaging residents in the design and implementation process. As the report states, many residents workgroups did not just ended when Home Zones were delivered but continued working together after them on other community projects and activities. In terms of traffic impacts the report also describes positive results. Speed measures estimate reductions between 10 and 15 mph while in terms of rat-running volumes have also diminished (DFT, 2005a).

In terms of urban regeneration the report explains how Home Zones have had a positive impact on renewal projects. They have complemented other sources of funding in successful schemes such as several Pathfinders projects in the north of England. The report also highlights the improvements of Home Zones over the built environment: "Due to the use of premium materials, the planting of street trees and the provision of planters" (DFT, 2005a p. 85). In terms of crime the report states that indicators, although are still too new, they do show a clear contribution in the reduction of crime. The use of alley gates, new lighting and the renewed landscape has been the reason behind such effect.

The report also describes as another outcome of Home Zones the provision of new safe play areas. Many schemes included in their design the development of specific play areas but generally just the fact of slowing down cars speed and volume traffic has had a positive impact on children's use of streets. Anyhow this issue also has produced some

problems. First that many neighbors complain on the undesirable effects of children playing near their cars and front gardens. Secondly, some of these new play areas have been reported to attract teenagers with antisocial behaviors producing some few incidents (DFT, 2005a).

The report also mentions how Home Zones might even contribute to communities' health and spirit as a result of a better environment which promotes walking, playing and socializing. Finally the report also mentions the economic impacts of Home Zones which we will describe in the following point of this chapter.

Researcher Tom Gill has been evaluating for the last years Home Zones initiatives in the UK. He has written two reports from which *Can I Play Out,* written for London Play gives a complementary perspective to DFT report. Although the report is focused on the effects of Home Zones on Children he includes a more general critique of what he and other evaluations have observed. In his report Gill supports the idea that Home Zones tackle neighborhoods needs and are popular among most residents and planners and as such are schemes that probably will continue being developed. Anyhow, in spite of this, he highlights some limits of Home Zones as public policy and the need of a new approach for them. Basically he explains that Home Zones are very expensive projects concentrating their benefits too locally on a much reduced number of people. Also they are time consuming as schemes take several years to be delivered. He presents conclusions from two Boroughs which have after evaluated their local Home Zones experiences (Camden and Bristol). Both conclude that although Home Zones might achieve some quite positive outcomes it is difficult to sustain future developments as in the case of being successful other residential areas will expect to improve their streets in similar ways which is something impossible to fund due to its high costs (Gill, 2007).

Gill explains how Home Zone's results although positive are also quite limited. He advocates for the need of further research on design and the way to deliver such outputs reaching more people and in a cheaper form. He mentions two organizations working on new approaches. Living Streets which focus street improvement proposals in more massive areas such as High Roads, Schools or other public facilities and Sustrans which are proposing "*DIY Streets*" which are some sort of low-cost Home Zones (Gill, 2007).

4.3 Home Zones Projects Economic Evaluations

Specifically in terms of economic impacts over property prices DFT's report mentions how several schemes have had positive effects on their areas. It presents snapshots of some specific cases in which local analysis or estate agents have commented on impacts. Results according to this report may vary positively between 2% and 15% of property prices increasing as a result of interventions (DFT, 2005a).

One of the Home Zones mentioned by Gill's report for which economic impacts have been measured is the Southville scheme in Bristol. According to a local evaluation the Home Zone has shown a positive effect on property prices: "Southville evaluation suggests that being in a Home Zone can add up to £5,000 onto property values" (Gill, 2007 p. 23).

Another local report estimating the effects of Home Zones on property values is Atkins report on Derby's Manorgate Home Zone. According to consultants while average property prices grew in Derby near a 12% per year in the Home Zone prices indicate an annual growth of 17.4%. According to this report this should be considered as one of the highest results for properties value impacts in the UK (Atkins, 2005). This Home Zones is one of the case studies analyzed by this dissertation.

5. Research Methods and Case Studies Selection Criteria.

As explained before the aims of this dissertation are two: First to build from researches that through economic analysis try to measure the value of urban design and public realm in cities. Secondly to have from such economic analysis an assessment of Home Zones programmes in the UK as a complement to other evaluations undertaken. For such task the dissertation proposes to look at the impacts of Home Zones projects on property values before and after intervention within a quantitative approach. Using the information available from the Land Registry the analysis compares in time the evolution of property values between Home Zones and comparable areas. From a group of selected cases the idea is to have a general picture of Home Zone's impacts on property values as also comparing successful with less successful cases among them.

The case studies selected were strongly determined by two elements: available information on Home Zones and the type of data managed by the Land Registry. As mentioned before London Play has calculated that there should be near 100 Home Zones projects already developed in the UK. Unfortunately as explained by this organization there is no one complete body of information organizing all these projects. Partial information can be found in government reports, other Home Zone's researches and specialized web pages.

From the information available we were able to find the location and some further data for nearly 30 projects. These Home Zones were then filtered determined by the type of data available from the Land Registry. At the end of the analysis we find relevant results in 6 case studies form which this dissertation proposes its conclusions. For three of these cases we obtained local estates interviews which complement our quantitative analysis.

Before describing briefly the 6 projects analyzed we explain the criteria which led to the final selection of them.

1) Home Zones analyzed had to be built before 2006 so to have at least 2 years of data after implementation. From the 6 cases selected one was completed in 2003, four in 2004 and one in 2005.

2) Sufficient number of transactions before and after intervention. This implied to focus on projects that were developed on a group of streets rather than just one. Some single street cases analyzed had too little number of freehold transactions which resulted in price averages highly dispersed throughout the years.

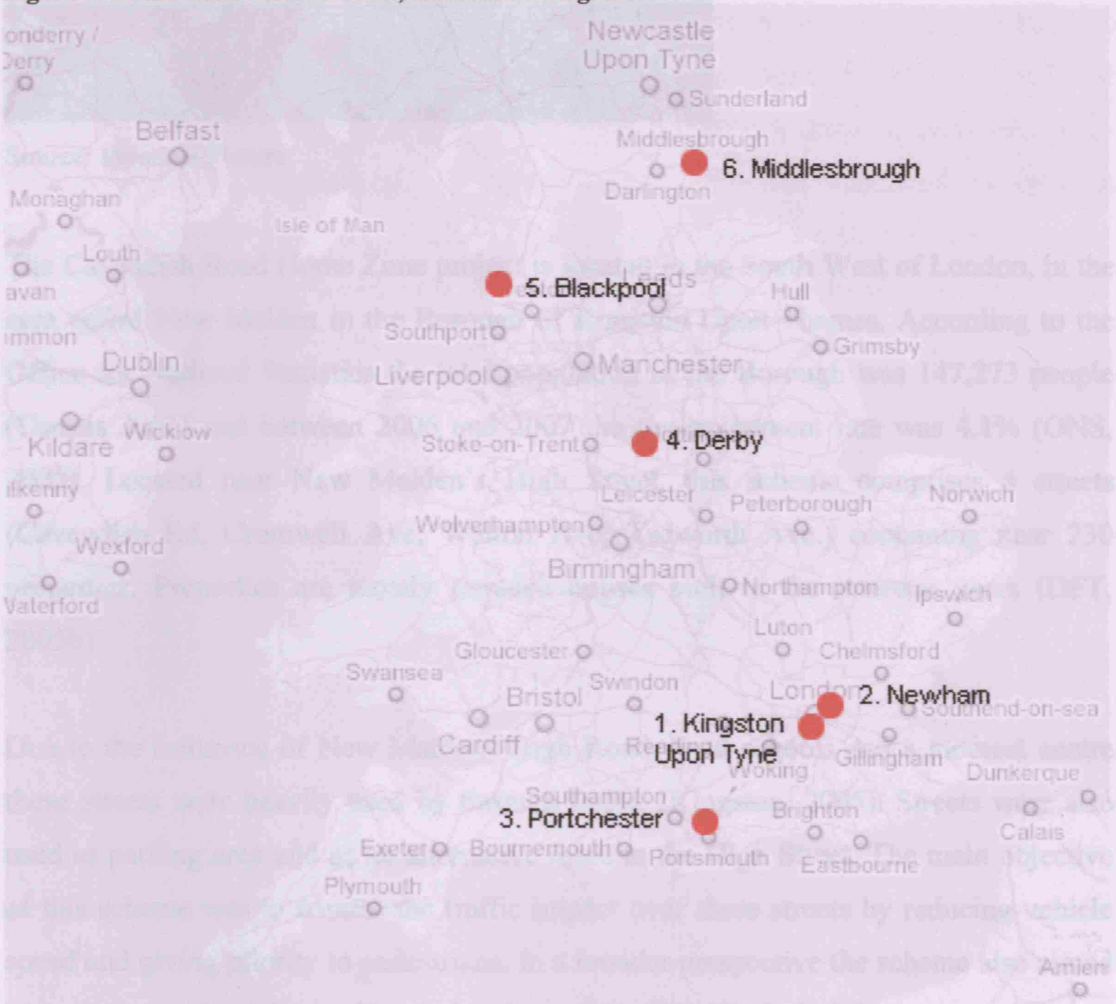
3) Study cases had to be interventions on areas of homogenous housing. As the Land Registry gives no information on floorspace for each transaction the average price unit we used was the house price average. Some interesting examples had to be withdrawn because their diversity of house types resulted also in price averages highly dispersed throughout the years.

4) Finally, projects had to have also comparable areas to compare their price evolution with. These had to be similar in terms of typologies and built environment. Also they had to be near enough so to be affected by the same urban local conditions.

6. Case Studies

Following the criteria explained in Chapter 4 the selected cases for analysis were: Cavendish Road (London), Rudolph Road (London), Castle Grove (Portchester), Normanton (Derby), Granville Road (Blackpool) and Gresham Area (Middlesbrough). The projects, described in this Chapter, are located in different parts of England as shown in the figure below.

Figure 1. Home Zones Case Studies, Location in England



Study Case 1: Cavendish Road, Kingston Upon Thames, London.

Source: Personal Picture

The Cavendish Road Home Zone project is located in the South West of London, in the area called New Malden in the Borough of Kingston Upon Thames. According to the Office for National Statistics the total population of the Borough was 147,273 people (Census 2001) and between 2006 and 2007 the unemployment rate was 4.1% (ONS, 2008). Located near New Malden`s High Street, this scheme comprises 4 streets (Cavendish Rd, Cromwell Ave, Walton Ave, Tadworth Ave.) containing near 230 properties. Properties are mostly terraced houses built in the interwar years (DFT, 2005b).

Due to the influence of New Maldens High Road, local schools and a medical centre these streets were heavily used by through traffic (Kingston, 2005). Streets were also used as parking area and as an alternative route to the High Street. The main objective of this scheme was to control the traffic impact over these streets by reducing vehicle speed and giving priority to pedestrians. In a broader perspective the scheme also aimed to improve residential amenities and their quality of life (DFT, 2005b).

The project had a total cost of £470,000 funded mainly by the Challenge fund. The project was leaded by the council and had an important amount of residents' participation (Kingston, 2004). They were organized in a team work of 22 representatives and through out meetings and public events contributed soundly in the

projects design. The construction started in 2003 and was completely finished by the first months of 2004 (DFT, 2005b).

In terms of design the project comprises a shared surface among road and sidewalks. Parking lots are reorganized in different positions breaking the street continuity in order to low traffic speed. New planting, flower beds and lighting was added. The sizes of footpaths were halved in order to introduce parking bays (Kingston, 2005).

In terms of project evaluation according to DFT, Cavendish Road Home Zone has delivered environmental improvements and residential amenities. The scheme has also been successful in terms of community participation engaging residents with the project. This social impact might be contributing to the drop in recorded crime according to DFT. The Borough of Kingston Upon Thames has mentioned that speed in these streets has dropped as a result of the project (Kingston, 2004), although the report *Can I Play Out?* mentioned that these reductions have not been as successful as planned, as speed average has been monitored around 19-22 mph (Gill, 2007).

Study Case 2: Rudolph Road, Newham, London

Source: Personal Picture

The second Case Study, the Rudolph Road Home Zone is also located in London but in its east side. Specifically in the area of Plaistow in the Borough of Newham. According

to the Office for National Statistics the total population of the Borough was 243,891 people (Census 2001) and between 2006 and 2007 the unemployment rate was 12.2% (ONS, 2008). The Rudolph Home Zones is close to the Plaistow Underground Station and includes a group of six streets. The area mainly comprises terraced housing although there are also some flats and council housing in the area. The total amount of houses in this Home Zone is about 750 properties (Westham, 2005b).

As an area with significant social problems the scheme addresses together with traffic calming objectives the idea to improve residents' environment through a process of public participation and engagement.

£320,000 were the total costs for this project which represents the smaller amount of investment among of the schemes analyzed. The project was leaded and funded by West Ham and Plaistow New Deal for Communities with the collaboration of the Borough of Newham and local residents. As in other schemes public participation was an important element throughout the Home Zone development. The construction of this Home Zone was during 2005 (Newham, 2006).

As mentioned above in terms of design, this scheme is the most modest one among the cases analyzed. It does not consider a street shared surface which explains its difference in terms of budgeting. Considering that this is an extensive area such difference is substantial. The project main investments were in traffic calming features in streets junctions, sidewalks improvements, modular bed plantings that organize car parking, and formal play facilities in some specific street corners (Newham, 2006).

One of the main outcomes of this project has been in terms of social capital. The residents working in the design and implementation of this scheme have kept working together on new projects improving their environment (Westham, 2005a).

Study Case 3: Castle Grove, Portchester, Hamsphire.

Source: (DFT, 2005a)

This Home Zone project is located in the north side of the Portsmouth Harbor, in the South of England. Specifically in Portchester from the Borough of Fareham. According to the Office for National Statistics the total population of the Borough was 107,977 people (Census 2001) and between 2006 and 2007 the unemployment rate was 4.1% (ONS, 2008). The project includes three streets: Castle Grove, Sunningdale Road and Myrtle Avenue. The area comprises mainly terraced houses from the 1900s to the 1950s and two schools to the east and west of them. Near 240 properties are located within these three streets which are near to Portchester`s Town Centre (DFT, 2005b).

The aims of this proposal were similar to other schemes: Provide adequate parking for residents, reduce vehicle speed, increase safety and improve quality of life. Particular concern for this area was schools and Town Centre traffic influence (Fareham, 2003).

This Home Zone was leaded by the Hampshire County Council and supported by the Borough of Fareham. The scheme also considered permanent consultation with residents and civic groups from Portchester. Residents participated in different stages of the design process. A resident's working group was formed for these matters. The project was finally completed in the January 2005 with a total cost of £1,000,000 with the Challenge fund as main source of funding (£500,000).

The completed scheme considers a shared surface between footway and carriageway only differentiated by color surfaces. The proposal reorganizes car parking by an in-line layout. The design also includes hard landscaping features, new lighting, entrance gateways and streets name plates designed by the Local School students (Fareham, 2003).

After completion this project was evaluated by DFT. According to them the project was successful in controlling and reducing cars on road parking as it was also successful reducing vehicle speed. As a result of this residents were benefited by a more secure street and easier parking for them. The environment was also improved by trees and shrubs planting which encouraged residents to improve their own frontage properties (DFT, 2005b).

Study Case 4: Normanton, Derby.

Source: (Atkins, 2007)

The Normanton Home Zone is located in the city of Derby, the fourth case study for this dissertation. According to the Office for National Statistics the total population of the Borough was 221,708 people (Census 2001) and between 2006 and 2007 the unemployment rate was 6.1% (ONS, 2008). The Normanton Home Zone project is quite an extensive intervention located 1 mile to the south of Derby`s city centre in a quite deprived area. This area is part of a broader regeneration programme called the

Pear Tree Renewal Area which includes a more extensive area with other housing renewal schemes. Inside this area, The Normanton Home Zones project includes near nine streets of intervention. However this project was divided in three stages and this dissertation will only focus on phases 1 and 2 which have taken a larger investment in a smaller area under the traditional features of Home Zone projects. Phase three has been developed later and considers more modest traffic calming features especially on street junctions. Phases 1 and 2 consider streets: Havelock Road and Cameron Road (phase 1), Randolph Road and Sackville Road (phase 2). This area comprises mainly terraced housing built in the late nineteenth century (DFT, 2005b).

Among the objectives of this project DFT describes: reduce vehicle speed, improve safety and give priority for pedestrians and cyclists, provide play spaces for children, improve the environmental image by creating greener streets and deter crime through street lighting.

As other schemes analyzed Normanton Home Zone project was leaded by the local Borough with strong collaboration from residents through different participation initiatives. Its one of the most expensive projects analyzed, with a total cost of £1,000,000 mostly funded by DFT challenge fund. The project was started to build on June (Phase 1) and November (Phase 2) of 2004 and was completed in mid 2005. (Atkins, 2007)

In terms of urban design this Home Zone also considers one unique level surface for all street users. The street layout is redesigned through new parking bays, tree planting and traffic calming features to reduce vehicle speeds. The project also includes new street lighting and entry treatments including traffic signs and junction treatments.

Derby City Council undertook a local comprehensive evaluation after the development of the Normanton Home Zone hiring urban consultants Atkins for this task. In terms of traffic flows Atkins mentions council surveys which show an overall 25% decrease in traffic flows through home zones. Traffic speeds were also reduced. Crime reduction has been one of the main outcomes achieved by the Home Zone according to Atkins. It dropped 47% of total crime after its completion. The report also mentions an increase in property price value which we further discuss in the next chapter (Atkins, 2007).

Study Case 5: Granville Road, Blackpool.

Source: Google Map

In the North East of England, Blackpool is home for the fifth case study of this dissertation: Granville Road Home Zone. According to the Office for National Statistics the total population of the Borough was 142,283 people (Census 2001) and between 2006 and 2007 the unemployment rate was 6.0% (ONS, 2008). The project is specifically located in a Neighborhood Improvement Area approximated one mile from Blackpools Sea Front and Centre, named Talbot and Brunswick. To the south east of this area, the Home Zone specifically considers four residential streets: Granville Road, Durham Road, Cambridge Road and Oxford Road. Mostly terraced houses with small front gardens the Home Zone area comprises some 215 houses aprox (DFT, 2005b).

As a run down area part of a Neighborhood Improvement Area the objectives stated by DFT for this project were more focused on environmental and social issues than traffic management. DFT states three main objectives with this scheme: Improve the area making it a more livable and sustainable community, improve lightning making it a safer place, and engage the community to be part of the project by investing in their own homes and consolidate a community spirit.

The Granville Home Zone, part of the Talbot and Brunswick neighborhood improvement area was leaded by Blackpool`s council with the support of their residents. The project had a total cost of £1,300,000 mainly funded by the governments Home Zone Challenge programme. This most expensive scheme analyzed by this dissertation started its construction in 2004 and was mainly finished by March 2005 (DFT, 2005b).

According to DFT environmental improvements have made the place safer, in particular as a result of alley gates controlling the use of these areas and lightning improvements. Surveys show that the numbers of burglaries have reduced. Environmental improvements have also made the place more attractive for residents, as DFT mentions that property owners have carried out external refurbishments of their houses. According to them this has resulted in property values rising although they don't mention amounts. Finally they also mention that Children have been playing more on streets although this has become a matter of discussion among neighborhoods who not all share this outcome as a positive effect (DFT, 2005b).

Study Case 6: Gresham Area, Middlesbrough.

Source: Google Map

The last case study for this dissertation is located in Middlesbrough in the north east of England. According to the Office for National Statistics the total population of the Borough was 134,885 people (Census 2001) and between 2006 and 2007 the unemployment rate was 8.0% (ONS, 2008). The project is located in the Gresham Area an extended area of terraced houses to the south west of the town centre. The Home Zone project is particularly developed on a group of four characteristic streets of this area: Hartford St., Costa St., Aire St. and Warwick St. The total amount of houses in this Home zone is about 220.

Main objectives for this area according to DFT were to improve the community fabric, provide safety for vulnerable users, increase security, discourage external traffic and redesign on-street parking (DFT, 2005b).

As other schemes analyzed this project was also submitted to the Challenge Fund leaded by the local Borough with the support of residents. During the process of design this scheme had a series of events and venues promoting residents participation and commitment to the Home Zone scheme. It was finally begun to build on 2004 and finished in the beginnings of 2005. This with a total cost of £750,000.

In terms of impacts DFT outlines improved streetscape and better night lightning. As a result of these the area has been perceived safer and a more pleasant ambience for residents. DFT also mentions that early transactions show house prices increased faster than on adjacent areas (DFT, 2005b).

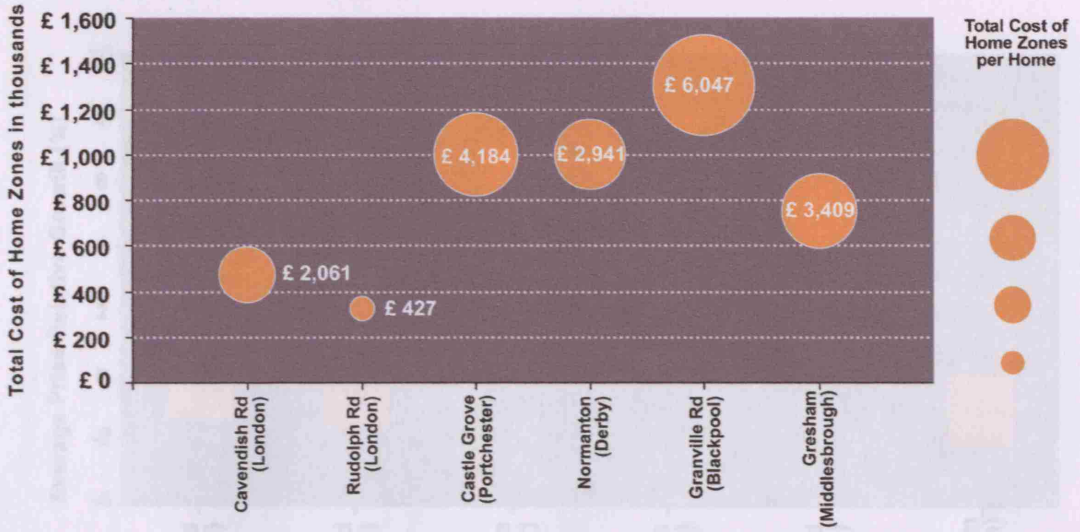
7. Results

7.1 Overall Results

As explained at the beginning of this dissertation, the results of this economic analysis are based on the measurable costs and benefits each different project generates. In this sense we look first at the total amount of investment each project required and then compare it to the total economic value created as a result of such implementations. Describing the results of our analysis we will present first the overall figures comparing the six case studies among them. Afterwards we analyze in more detail each case independently.

In terms of investment we looked at two variables for each project: Total amount of investment and total amount of investment per house. Although in terms of CBA we only need the total amount of investment, the second indicator gives us a clue on the levels of intervention for each scheme. Total investments for the Home Zones analyzed varied from £320,000 up to £1,300,000 while total investment per house varied from £427 up to £6,047. From the six cases analyzed the least expensive project is Rudolph Rd. in East London which in terms of cost per house is far below from the other 5 cases. This as explained in the previous chapter is because this scheme is the only one that does not consider the development of a shared street surface all along its project area. The graph bellows compares the six cases from these two points of view.

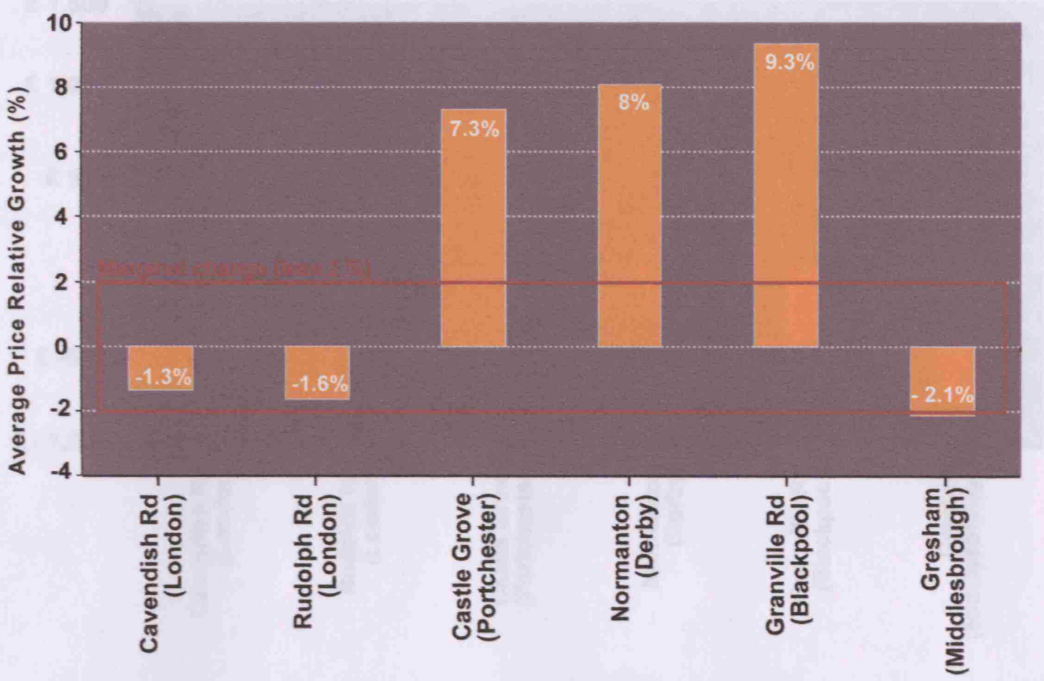
Figure 2. Home Zone's Total investment and Total investment per House.



Secondly, we considered the relative growth of prices on properties as the economic benefits generated by Home Zones. Up to some extent most observable social benefits achieved by Home Zones should be represented in the price people are willing to sell their houses for.

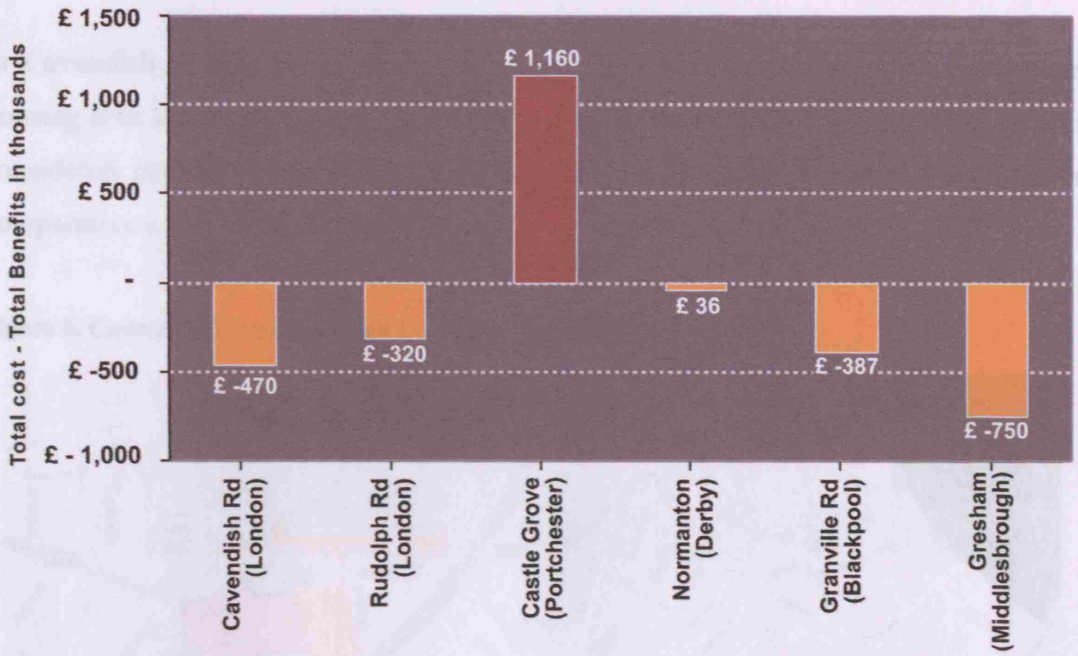
Results from the six case studies analyzed show that in three of them there is a clear growth on property prices due to Home Zone projects. These cases are Castle Grove (Portchester), Normanton (Derby) and Granville Road (Blackpool) which are also the three most expensive schemes among the analyzed ones. For these three cases the average value of their properties grew relatively more than their comparative areas (between 7% and 10%). The other three case studies analyzed seem to have grown relatively less than their comparative areas after the development of their Home Zones. Anyhow this difference is between 1% and 2%, amount which we have considered to be marginal. In other words we consider that Cavendish Rd (London), Rudolph Rd. (London) and Gresham (Middlesbrough) had no discernible impact in the value of their properties after the development of their Home Zones. The graph below illustrates the impact of projects in the relative growth of their properties prices.

Figure 3. Average Price's Relative Growth After Home Zone Construction



Finally, from the six projects analyzed only one of them is able to actually create value over their cost of investment. This is the case of Castle Grove which with a 7.3% of relative growth generates a total value of £2,156,000 as a result of the initial average value of its houses multiplied by its relative growth and then multiplied by the amount of houses in its Home Zone. This minus the £1,000,000 of initial investment results in £1,156,000 of created value. Despite of this, as it can be observed in the figure below, from the six cases analyzed this is the only scheme were positive figures are achieved. In the cases of Normaton and Granville Rd subtracting costs to benefits both get negative results: -£36,000 and -£387,000 respectively. Worst results obtain the other three cases considered having no impact on properties prices. Because of this, their CBA only took into account their costs of investment from which the worst result was as a consequence the most expensive one: Gresham Home Zone, Derby (-£750,000).

Figure 4. Home Zone's Social Economic Profit.



7.2 Results per Cases

Using the data from the Land Registry, property prices were analyzed between years 2000 and 2007. Home Zone's property prices were compared to similar and adjacent areas` property prices. An overall price average is then calculated for the years before the Home Zone was started to build up. Another average price was calculated for the years after the project was already developed. From this figures, for each project area and their comparative one we calculated their growth percentage. Then the project area`s growth is compared to the comparable area's growth again as a second percentage. This expresses the relative growth of Home Zones property prices as an exclusive indicator of the impacts of this investment. This percentage is afterwards multiplied by the number of houses in the Home Zone and multiplied again by the average price before project. This represents the total value created by each scheme. Finally this total value is substracted from the total cost of each project resulting in the economic return of each project.

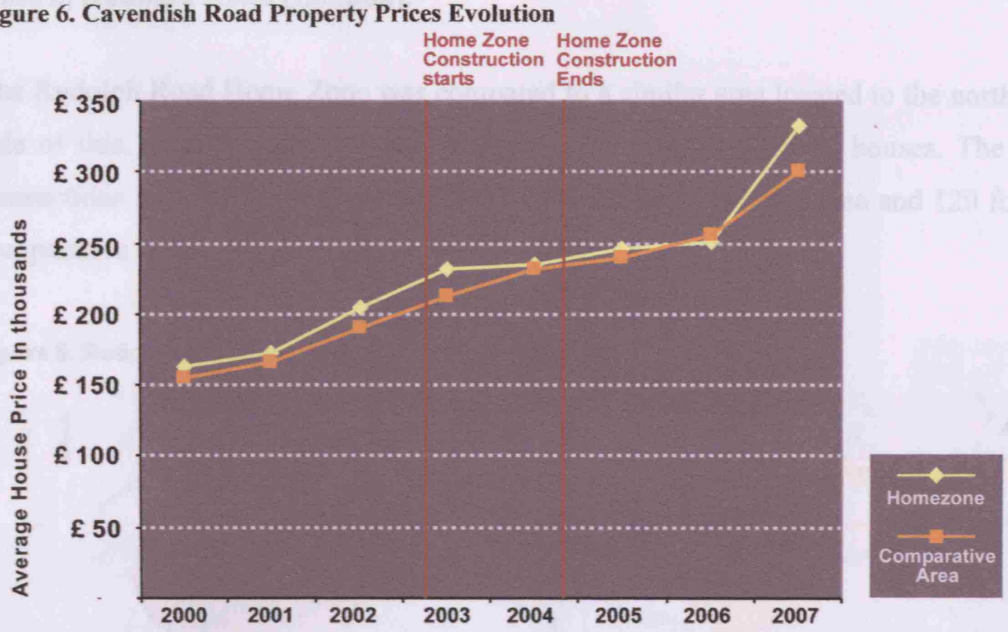
Case 1, Cavendish Road (London).

In Cavendish Road's Home Zone the project area is compared to a similar terraced housing area located to the east of it as shown in the figure below. The total transactions considered between years 2000 and 2007 were 69 in the project area and 87 in the comparative area.

Figure 5. Cavendish Home Zone and Comparative Area

As the project was developed in the years 2003 and 2004 average prices were calculated between years 2000, 2001 and 2002 as "before project" and 2005, 2006 and 2007 as "after project". The average price "before project" in the Home Zone was £180,385 while in the comparative area was £171,095. This difference remained almost the same "after project" with £276,127 in the Home Zone and £265,503 in the comparative area. As a result in relative terms average prices in the Home Zone grew 1.4% less than in the comparative area. We consider this result to be marginal.

Figure 6. Cavendish Road Property Prices Evolution



These results are backed by Local Estate Agent Amin Baghdadi from *Curchords Estate Agents*. In his opinion there are no discernable effects on property prices after the Home Zone development. Although the project has had some positive effects in terms of controlling off road parking (affected by the High Road) and landscape improvements there are also some negative effects in terms of housing demand. According to him from his own experience selling houses in the area, many people tend to find the Home Zone "untidy" and "ackward" as cars are organized in different positions throughout the street (Baghdadi, 2008).

In terms of CBA this means that the project does not generate any measurable economic benefit. In other words, from an economic perspective the project only considers costs. £470,000 as a public expenditure with no measurable economic return.

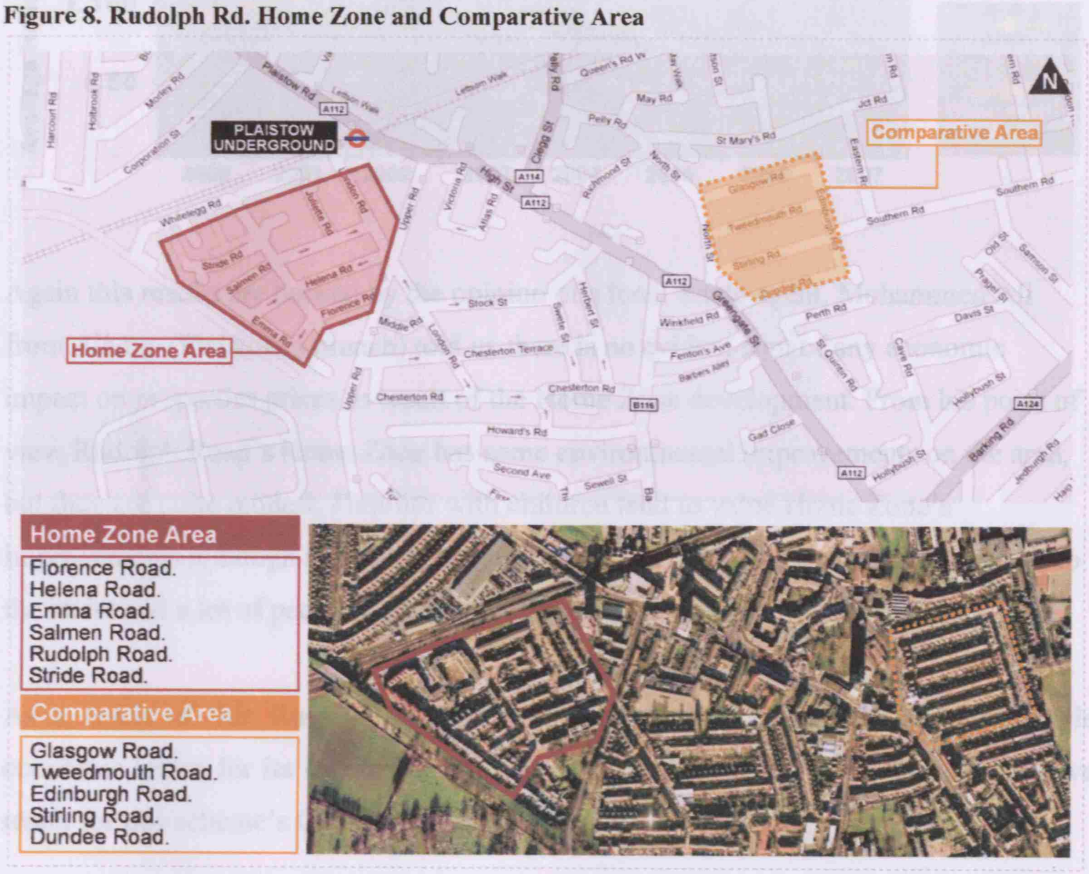
Figure 7. Cavendish Road Home Zone Social Cost Benefit Analysis

Cavendish Road	
Proyect costs	£ 470,000
Number of houses	228
Cost/houses	£ 2,061
Benefits	–
Benefit/house	–
Social return	£ -470,000

Case 2, Rudolph Road (London).

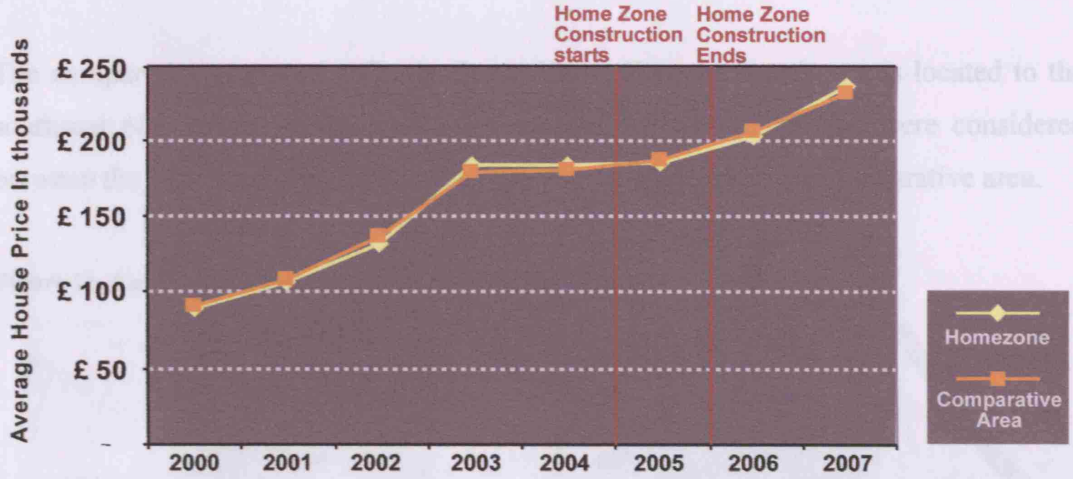
The Rudolph Road Home Zone was compared to a similar area located to the north east side of this. In both cases the data analyzed was only for terraced houses. The total transactions between years 2000 and 2007 were 73 for the project area and 120 for the comparative area.

Figure 8. Rudolph Rd. Home Zone and Comparative Area



As mentioned before this was the last project to be built from the cases analyzed (2005). Because of this the average price for properties "before project" was calculated between years 2003 and 2004 for both areas. The period "after project" was calculated between years 2006 and 2007. Before the project the average price of properties in the project area was £182,697 while in the comparative area was £178,720. After project the average price of properties was £217,959 in the project and £216,774 in the comparative area. This represents in relative terms that the Home Zones prices grew 1.6% less than in the comparative area, difference we consider to be marginal.

Figure 9. Rudolph Rd. Home Zone Property Prices Evolution



Again this results are backed by the opinion of a local estate agent. Mohammed Ali from *Albany* (Plaistow`s branch) told us there is no evident sign of any economic impact on properties prices as result of the Home Zone development. From his point of view Rudolph Road's Home Zone has some environmental improvements on the area, but they are quite modest. Families with children tend to value Home Zone's improvements although new playgrounds developed over street corners seem to near to the street and a lot of people find them unsafe places for children (Ali, 2008).

As a result of this Rudolph Rd Home Zone also does not create any measurable economic return for its investment. This leaves just the cost of £320,000 as a negative result for this scheme's CBA.

Figure 10. Rudolph Rd. Home Zone Social Cost Benefit Analysis

Rudolph Street	
Proyect costs	£ 320,000
Number of houses	750
Cost/houses	£ 427
Benefits	–
Benefit/house	–
Social return	£ -320,000

Case 3, Castle Grove, Portchester (Hamsphire).

The comparative area to the Castle Grove Home Zone in Portchester is located to the southeast of this area as shown in the map below. 61 transactions were considered between the year 2000 and 2007 in the project area while 45 in the comparative area.

Figure 11. Castle Grove Home Zone and Comparative Area

Home Zone Area

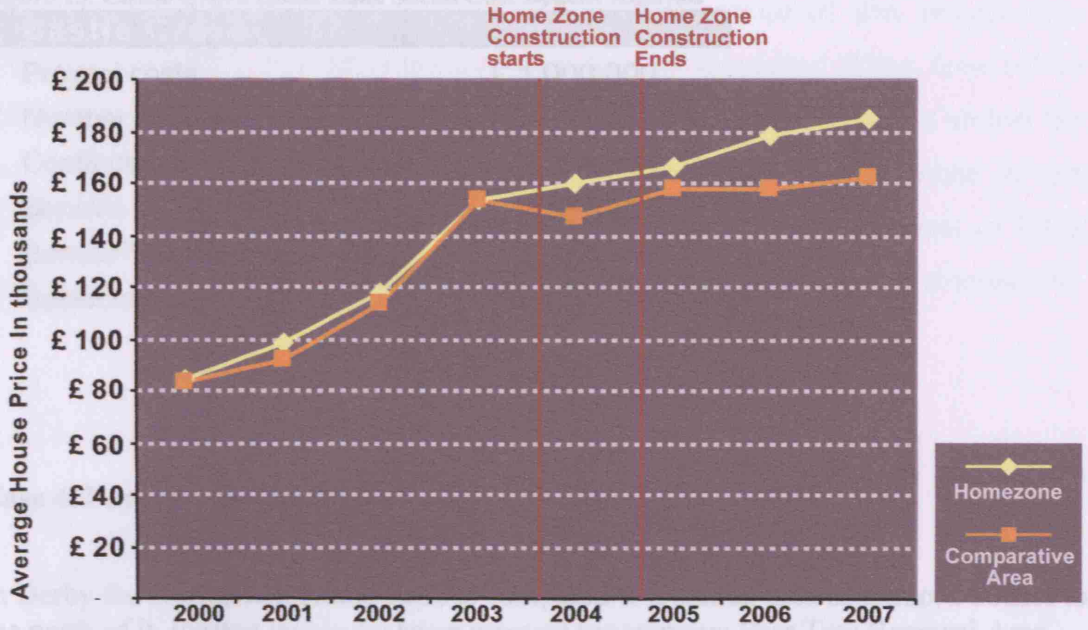
Castle Grove.
Sunningdale Road.
Myrtle Avenue.

Comparative Area

Edgar Crescent.
Bayly Avenue.
Cooper Grove.
Denville Avenue.
Benham Grove

As described earlier this Home Zone was built in the year 2004, because of this average price "before project" were calculated from years 2001, 2002 and 2003 while for the period "after project" were 2005, 2006 and 2007. The average price before the project was £123,444 inside the Home Zone while in the comparative area was £119,305. Average prices after the project were £176,700 in the Home Zone and £159,125 in the comparative area. The average prices grew in distance positively for properties in the Home Zone in £13,436. In relative terms this means that property prices grew 7.3% more due to this scheme.

Figure 12. Castle Grove Home Zone Property Prices Evolution



For this project we also obtained a local estate agent's opinion to compare our results with. This is the only case were such expert's opinion was slightly different from ours result. According to Angelina Malcolm who works for *Jeffries* in Portchester she doesn't think that prices have been really affected in a positive or negative way, although she does perceive some benefits from Home Zone (encourages off road parking) that might be contributing as a positive selling point (Malcolm, 2008). Her opinion somehow ambiguous we further comment it in our conclusions. Anyhow in terms of CBA we use our data results.

As the average price for houses in this area is quite high (compared to houses analyzed in the north of England) that 7.3% has an important impact on the CBA for this scheme. This because by multiplying the relative growth of properties (7.3%) times the average price before the Home Zone (£123,444) times the number of houses in the area (239) the total value achieved by this project is estimated to be £2,160,000. As the initial investment was £1,000,000 the social profit for this scheme finally was £1,160,000. As explained before this is the only case from the six analysis which ends with positive results from this economic analysis.

Figure 13. Castle Grove Home Zone Social Cost Benefit Analysis

Castle Grove	
Proyect costs	£ 1,000,000
Number of houses	239
Cost/houses	£ 4,184
Benefits	£ 2,159,997
Benefit/house	£ 9,038
Social return	£ 1,159,997

Case 4, Normanton, (Derby).

In Derby the Normanton Home Zone is compared to a similar area of terraced houses to the north of it, located inside the same renewal programme: Pear Tree Renewal Area. Between years 2000 and 2007 the total transactions considered in the project area were 151 while in the comparative area there were 109.

Figure 14. Normanton Home Zone and Comparative Area

Home Zone Area

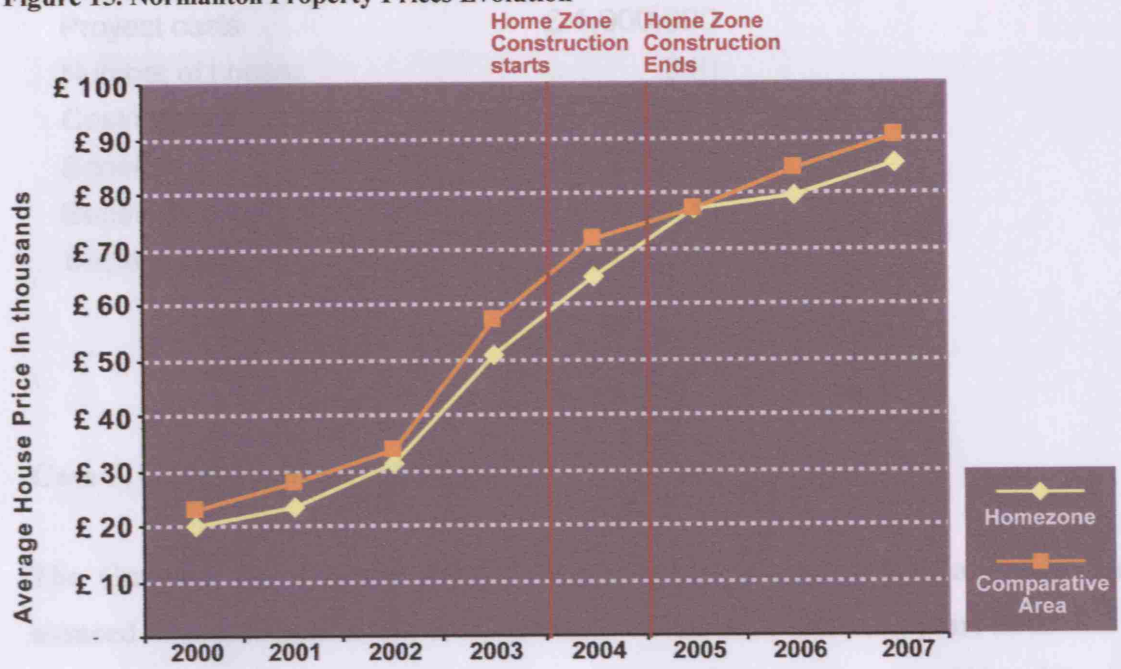
Havelock Road.
Cameron Road.
Randolph Road.
Sackville Street.

Comparative Area

St Giles Road.
Violet Street.

This project was developed in the year 2004 so years considered for the average price before project were 2001, 2002 and 2003 while years considered after project were 2005, 2006 and 2007. Properties price average for the Normanton Home Zone before project was £35,072 while for the comparative area was £39,566. After the project the price average in the Normanton Home Zone increased to £80,501 while in the comparative area it only reached £84, 027. This represents in relative terms an 8.1% increase of property value more in the Normanton Home Zone than its comparative area.

Figure 15. Normanton Property Prices Evolution



As described in Chapter 3, the Normanton Home Zone has been comprehensively assessed by urban consultants Atkins. Commissioned by the Borough of Derby, Atkins evaluated among other indicators the impact of Home Zone over property prices. They concluded that property prices have been positively affected by Home Zone. The average prices they estimated in the Home Zone before and after this scheme are almost identical to ours results. From this they concluded that while Derby`s price properties annual average growth has been 12%, in the Home Zone this has been 17.4% (Atkins, 2006). Results cannot be precisely contrasted because while Atkins compares the Home Zone with the city's average values we do it against a similar and adyacent area affected by the same local conditions (in order to specifically identify Home Zones added value).

What we find relevant anyhow is that in this case Atkins also observes a positive economic impact on property prices.

In terms of economic benefits then the Normanton Home Zone creates £963,551 as a result of relative growth multiplied by initial average price multiplied by number of houses in the Home Zone. Subtracted this amount to the £1,000,000 of initial investment this Home Zone`s CBA results in a marginal negative amount of -£36,449.

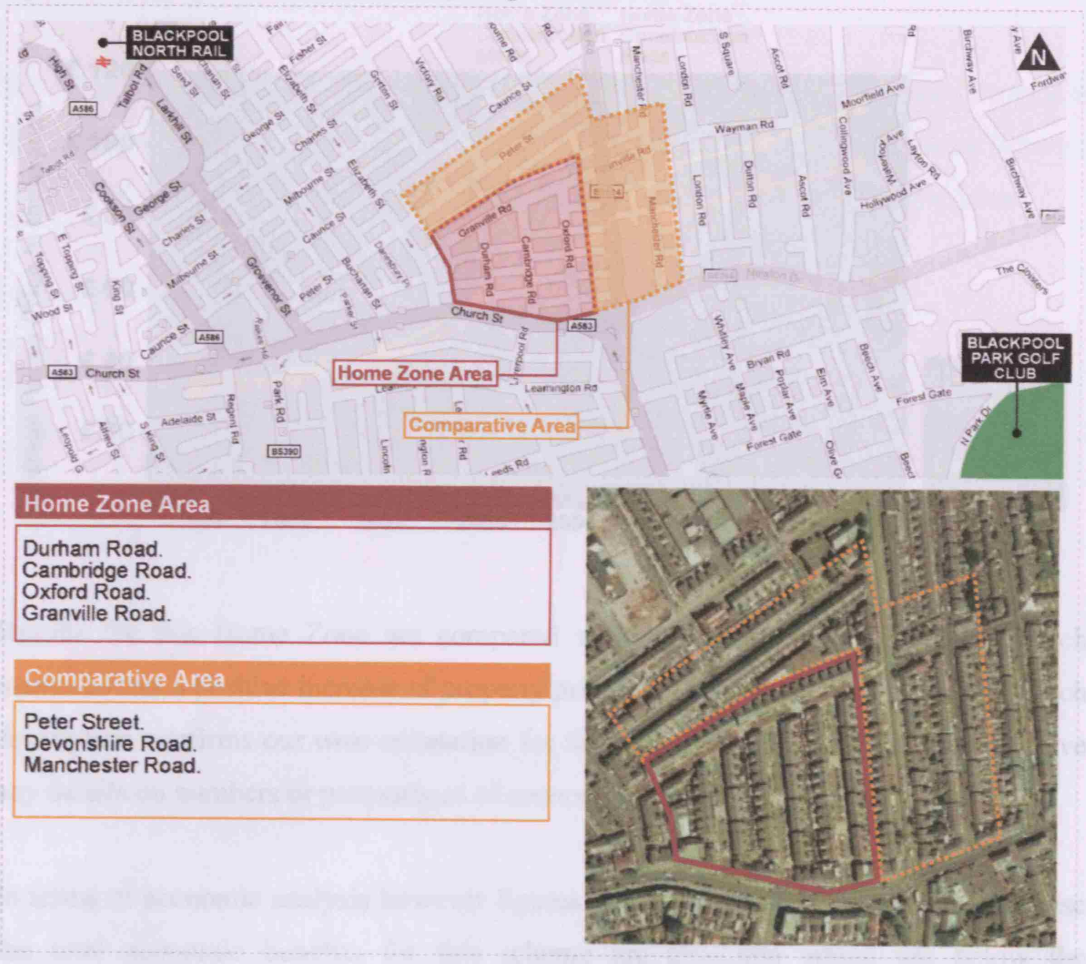
Figure 16. Normanton Home Zone Social Cost Benefit Analysis

Normanton	
Proyect costs	£ 1,000,000
Number of houses	340
Cost/houses	£ 2,941
Benefits	£ 963,551
Benefit/house	£ 2,834
Social return	£ -36,449

Case 5, Granville Road (Blackpool)

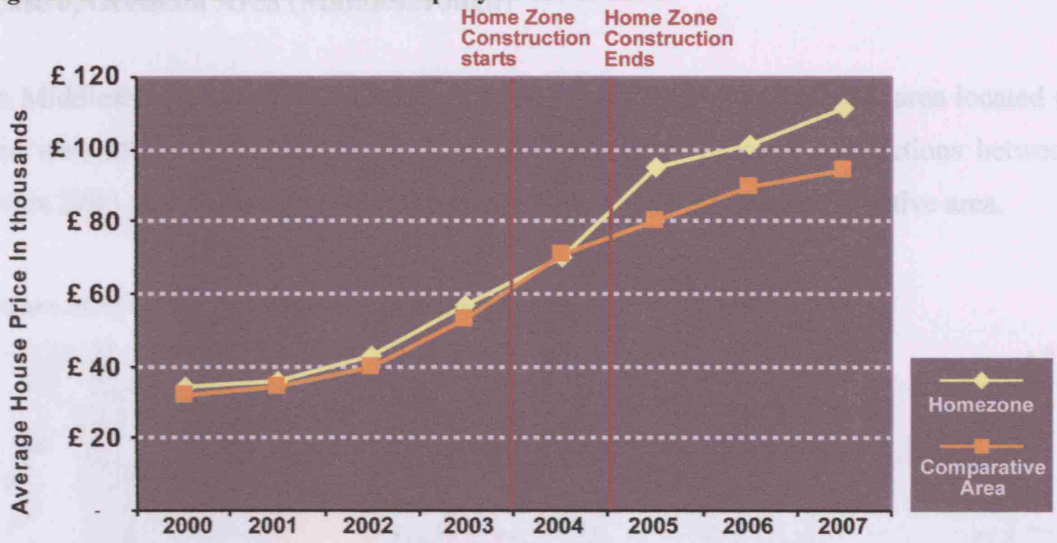
The Granville Raod Home Zone in Blackpool is compared with a similar area of terraced houses located to the east and north of this area. Between years 2000 and 2007 the total amount of transactions in the Home Zone area were 112 while in the comparative area were 202.

Figure 17. Granville Rd. Home Zone and Comparative Area



As the project was built in the year 2004 the years to be considered "before project" were 2001, 2002 and 2003 while 2005, 2006 and 2007 were used to calculate the average price "after project". The average price in the project area before the Home Zone was £45,410 while in the comparative area was £42,557. After the Home Zone was built the average price for the Home Zone increased to £102,556 while the comparative area only grew to £87,895. This means in relative terms that property prices in the Home Zone grew 9.3% more than other similar houses in the area. From this perspective this is the higher relative growth in property prices from all cases analyzed.

Figure 18. Granville Rd. Home Zone Property Prices Evolution



Results for this Home Zone are compared with information given by DFT which mentions that a positive increase of property prices has been observed for the area. Such description confirms our own estimation for this scheme although DFT does not give any details on numbers or percentages of economic impact.

In terms of economic analysis however figures don't turn out so positive. This because the total economic benefits for this scheme are £912,804 which are below the £1,300,000 of initially invested. In other words this scheme has a negative social return of £387,915.

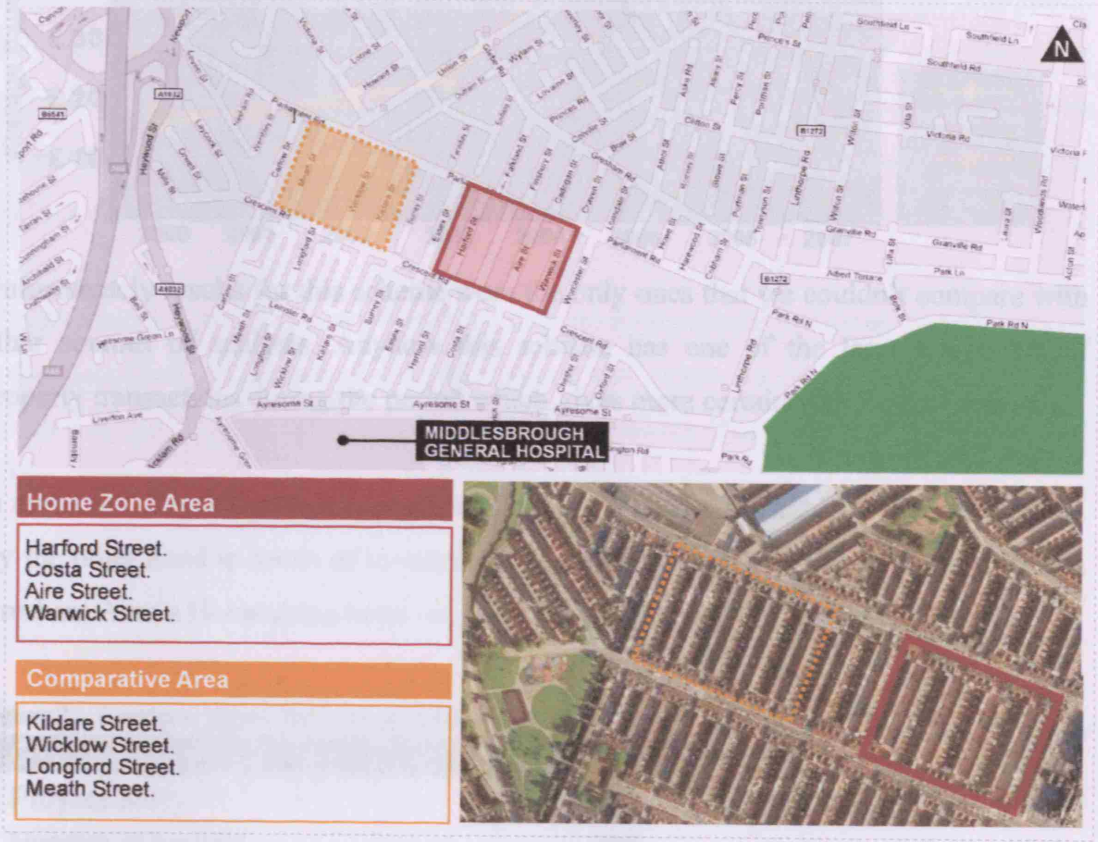
Figure 19. Granville Rd. Home Zone Social Cost Benefit Analysis

Granville	
Proyect costs	£ 1,300,000
Number of houses	215
Cost/houses	£ 6,047
Benefits	£ 912,805
Benefit/house	£ 4,246
Social return	£ -387,195

Case 6, Gresham Area (Middlesbrough)

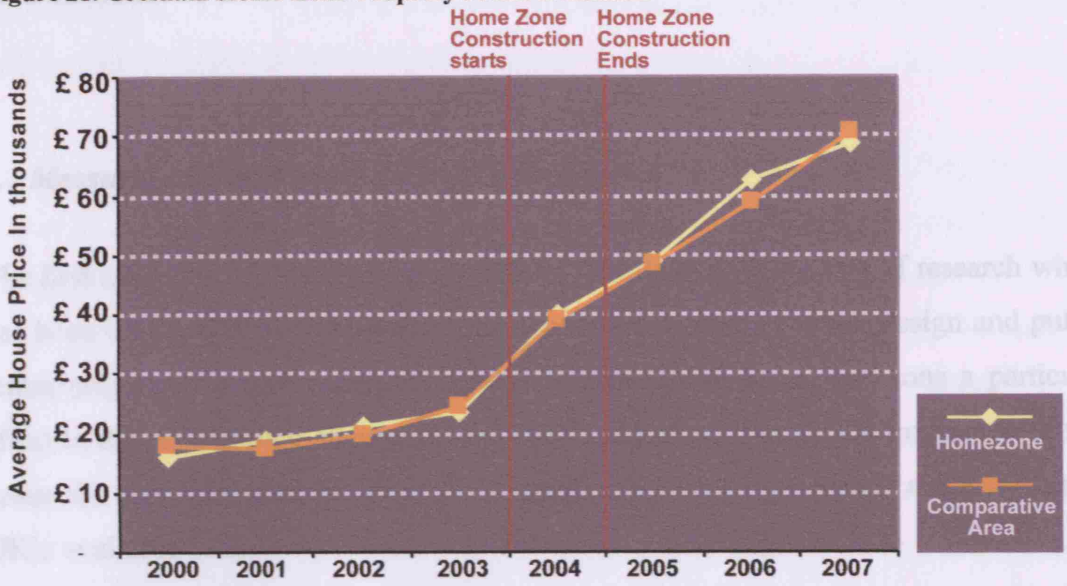
In Middlesbrough, the Gresham Home Zone was compared to a similar area located to the west of it (see figure below). The total amount of property transactions between years 2000 and 2007 were 169 in the Home Zone and 232 in the comparative area.

Figure 20. Gresham Home Zone and Comparative Area



The project was built in the year 2004 so average prices before project were calculated from years 2001, 2002 and 2003 while years 2005, 2006 and 2007 were calculated for averages after project. In the Home Zone the average price before project was £21,226 while in the comparative area turned out to be £20,517. After project the average prices raised to £60,071 in the Home Zone and up to £59,695 for the comparative area. In relative terms this means that the Home Zone property prices grew 2.1% less than in the comparative area. As for other cases before we consider this percentage to be marginal.

Figure 21. Gresham Home Zone Property Prices Evolution



Unfortunately results for this scheme were the only ones that we couldn't compare with other sources of analysis. Anyhow this scheme has one of the largest amounts of property transactions during the period which gives more certainty to the data analysis.

In terms of CBA this project is considered to produce no measurable economic benefits. By the other hand in terms of investment the project cost £750,000. As a result of this Gresham Area's Home Zone turns out to be the worst project in terms of CBA.

Figure 22. Gresham Home Zone Social Cost Benefit Analysis

Gresham	
Proyect costs	£ 750,000
Number of houses	220
Cost/houses	£ 3,409
Benefits	–
Benefit/house	–
Social return	£ -750,000

8. Conclusions

8.1 Measuring the economic effects of Home Zones.

The first objective of this dissertation was to contribute with the line of research which has been trying to find and measure the economic impacts of urban design and public realm projects. As analyzed in Chapter 2 British CABE Space has done a particular effort in this area in their attempts to improve the quality of urban environments. In this sense the aim here was, building from such experiences, to propose a method using UK`s available data.

The conclusions within this are two. First that the method used to answer whether Home Zones have had an impact on property prices has proven to work. Two of the cases which had no discernable impacts on property values (Kingston Upon Thames and Newham) were supported by local estate agents opinions in regards to their own experience in properties sales. According to them, although there were some positive outcomes from interventions they didn't find that these had any effect on properties value compared to similar areas in their surroundings. By the other hand, in two of three cases that do show positive impacts on property values (Derby and Blackpool), results are coherent with DFT`s evaluation which mention such effect on the area. This is specifically backed in the case of Derby were the local Borough hired consultants Atkins to undertake a comprehensive evaluation of the Normanton scheme. Their results are coherent with ours.

The only case were our results did not seem to match another source of information was in Portchester`s Home Zone. Here although we observed a positive impact on properties value a local estate agent gave us a different opinion: "In my opinion I don't think that house prices have really been affected in a positive or negative way. It has encouraged more of the residents to have off road parking if they didn't have it already. This of course is a positive selling point and will contribute to achieving a higher selling price" (Malcolm, 2008). Anyhow her answer is to some extent ambiguous. What we get out of this is that although Home Zone interventions might have some measurable effect on

properties prices this is quite limited and difficult to identify without precise measurements. This supports the importance of quantitative research trying to estimate the impacts of urban design and public realm.

In this sense the method proposed by this dissertation using Land Registry's data although does work has also one big limit. This is that the lack of floorspace data related to each transaction limits the type of areas and projects that can be analyzed. Only homogenous areas with one main typology of housing are suitable for analysis. Interesting Home Zones like Morice Town in Plymouth could not be included in this research because the diversity of its buildings resulted in average prices with too high dispersion among years. If the Land Registry had for each property transaction the total floorspace from that particular house (or flat...) this instrument would turn out much more useful for the analysis of urban design and its economic impacts. The applicability for other types of projects and contexts would increase largely making the research for urban design's economic impacts quite easier.

8.2 Home Zone's policy in the UK

By measuring the economic impacts of Home Zone projects the second objective of this dissertation aimed to assess these schemes from an economic perspective. This was to be achieved by pricing the benefits generated by these projects and comparing them to their initial investments. As such this dissertation would contribute from an economic analysis to other existing researches which have evaluated Home Zones mostly from other perspectives such as traffic impacts, environmental improvements and public participation.

Within this second objective our conclusion supports what other evaluations have pointed out about Home Zones as being very expensive projects. The average amount of money invested per home within the six projects analyzed is near £2,500. But what is more interesting from a Cost Benefit Analysis is that by pricing the benefits achieved by each project we can compare them to such costs. According to our results the total benefits achieved by this six projects divided by the total number of houses benefited is

near £2,000 per home. This means that for each house in a Home Zone nearly £500 were lost. In this sense Home Zones are not only expensive projects but they are public expenditure rather than public investment. The question then is whether Home Zones objectives are worth such a high public expenditure.

This doesn't mean that Home Zones don't generate benefits or are useless. In Fact our results show that half of the Home Zones had a positive economic impact on property values as an expression of those benefits. We think this shows that there is a demand for a better built environment at the residential street scale. But this demand has to find more efficient responses from urban design policies. We think that further development of Home Zones projects should be guided by two concepts. First that the costs of investment have to be much lower (because the benefits are limited). As we mentioned before, Tim Gill has written on how Sustrans is working on alternative schemes that aim to achieve the same objectives than Home Zones but with cheaper design solutions: *DIY Streets* (Gill, 2007). We believe this is a must for residential street improvements programmes. The second need is to understand better what the demand for better streets really is about. As discussed with local estate agents for many people Home Zones projects are not what they expected their streets to be like. To understand the relation between traffic management, streetscape design, and play areas further analysis should be done researching how different groups of people value this issues. Then design and public participation could build from this.

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10. Appendix

The information used in this dissertation in order to calculate the impacts of Home Zones over properties value were the property transactions available from the Land Registry. It was downloaded for each case study from the web page:

http://www.houseprices.co.uk/
(last visit: 12/09/08)

For each Home Zone we downloaded and edited the following information.

2_DATA

Zone	Registry Code	Sale Date	Price	Price	Year Transaction	House Type	House Tenure	New Build	Address
Project Area	1	11-07-2006	£180,000	180000	2006	Ter.	F	No	30, Florence Road, Plaistow,
Project Area	2	31-03-2005	£165,000	165000	2005	Ter.	F	No	22, Florence Road, Plaistow,
Project Area	3	07-03-2005	£185,000	185000	2005	Ter.	F	No	20, Florence Road, Plaistow,
Project Area	4	11-06-2004	£172,500	172500	2004	Ter.	F	No	12, Florence Road, Plaistow,
Project Area	5	15-01-2004	£160,000	160000	2004	Ter.	F	No	18, Florence Road, Plaistow,
Project Area	6	30-08-2001	£105,000	105000	2001	Ter.	F	No	14, Florence Road, Plaistow,
Project Area	7	26-01-2001	£100,000	100000	2001	Ter.	F	No	21, Florence Road, Plaistow,
Project Area	8	29-09-2000	£95,000	95000	2000	Ter.	F	No	25, Florence Road, Plaistow,
Project Area	9	16-06-2000	£83,500	83500	2000	Ter.	F	No	14, Florence Road, Plaistow,
Project Area	1	11-02-2008	£222,000	222000	2008	Ter.	F	No	52, Helena Road, Newham,
Project Area	2	16-01-2008	£240,000	240000	2008	Ter.	F	No	2, Helena Road, Newham, London,
Project Area	3	23-10-2007	£243,500	243500	2007	Ter.	F	No	6, Helena Road, Newham, London,
Project Area	4	12-09-2007	£226,000	226000	2007	Ter.	F	No	46, Helena Road, Newham,
Project Area	5	01-12-2006	£231,000	231000	2006	Ter.	F	No	60, Helena Road, Newham,
Project Area	6	13-06-2006	£180,000	180000	2006	Ter.	F	No	25, Helena Road, Newham,
Project Area	7	12-05-2006	£230,000	230000	2006	Ter.	F	No	32, Helena Road, Newham,
Project Area	8	12-05-2006	£189,950	189950	2006	Ter.	F	No	24, Helena Road, Newham,
Project Area	9	11-11-2005	£217,500	217500	2005	Ter.	F	No	56, Helena Road, Newham,
Project Area	10	12-05-2005	£213,000	213000	2005	Ter.	F	No	6, Helena Road, Newham, London,
Project Area	11	31-03-2005	£149,995	149995	2005	Ter.	F	No	6, Helena Road, Newham, London,
Project Area	12	31-03-2005	£157,500	157500	2005	Ter.	F	No	32, Helena Road, Newham,
Project Area	13	24-12-2004	£170,000	170000	2004	Ter.	F	No	8, Helena Road, Newham, London,
Project Area	14	30-11-2004	£166,000	166000	2004	Ter.	F	No	46, Helena Road, Newham,
Project Area	15	19-01-2004	£110,000	110000	2004	Ter.	F	No	64, Helena Road, Newham,
Project Area	16	07-03-2003	£190,000	190000	2003	Ter.	F	No	56, Helena Road, Newham,
Project Area	17	12-04-2002	£90,000	90000	2002	Ter.	F	No	50, Helena Road, Newham,
Project Area	18	08-01-2001	£85,000	85000	2001	Ter.	F	No	39, Helena Road, Newham,
Project Area	19	21-11-2000	£89,995	89995	2000	Ter.	F	No	44, Helena Road, Newham,
Project Area	20	20-03-2000	£84,500	84500	2000	Ter.	F	No	44, Helena Road, Newham,

e 1_ Kingston \ Case 2_ Newham / Case 3_ Porchester / Case 4_ dERBY / Case 5_ Blackpool / Case 6_Middlesborough /

Information was filtered then for properties in the project area (the Home Zone) and their comparative areas. For each year we considered property transactions that were Freeholds, Terraced Houses and Not Newly Built. As a result of this we obtained yearly average prices for each case study.

Cavendish Road, Kingston Upon Thames

1_RESULTS

Year	Project Area			Comparative Area		
	Total Transactions	Considered Transactions	Average Price	Total Transactions	Considered Transactions	Average Price
2000	11	11	162.955	8	7	155.814
2001	5	5	173.200	13	13	166.769
2002	7	7	205.000	11	10	190.700
2003	7	7	231.493	11	11	212.382
2004	11	10	234.200	16	16	232.278
2005	7	7	245.350	11	10	240.200
2006	9	8	250.750	11	10	255.400
2007	14	14	332.282	11	10	300.910

Rudolph Rd., Newham

1_ RESULTS

Year	Project Area			Comparative Area		
	Total Transactions	Considered Transactions	Average Price	Total Transactions	Considered Transactions	Average Price
2000	14	14	88.374	20	20	90.537
2001	7	7	107.000	9	9	107.055
2002	7	5	131.279	23	23	135.515
2003	3	3	183.000	20	20	178.445
2004	18	17	182.394	12	12	178.996
2005	8	7	184.571	11	11	185.955
2006	13	13	200.919	10	9	204.050
2007	7	7	235.000	16	16	229.499

Castle Grove, Portchester

1_ RESULTS

Year	Project Area			Comparative Area		
	Total Transactions	Considered Transactions	Average Price	Total Transactions	Considered Transactions	Average Price
2000	13	13	84.845	6	6	83.167
2001	9	7	98.857	4	4	91.674
2002	8	6	118.375	7	6	113.075
2003	5	5	153.100	9	9	153.166
2004	5	4	160.496	4	4	147.250
2005	13	12	166.833	6	5	157.600
2006	6	5	178.200	5	4	157.561
2007	9	9	185.066	7	7	162.214

Normanton, Derby

1_ RESULTS

Year	Project Area			Comparative Area		
	Total Transactions	Considered Transactions	Average Price	Total Transactions	Considered Transactions	Average Price
2000	13	13	19.773	13	13	22.808
2001	21	21	23.252	16	16	27.984
2002	22	22	31.018	18	16	33.844
2003	21	21	50.945	17	17	56.871
2004	24	24	64.864	10	9	71.817
2005	11	11	76.864	15	14	77.100
2006	22	22	79.508	16	16	84.607
2007	17	17	85.132	9	8	90.375

Cavendish Rd., Blackpool

1_ RESULTS

Year	Project Area			Comparative Area		
	Total Transactions	Considered Transactions	Average Price	Total Transactions	Considered Transactions	Average Price
2000	12	12	33.958		23	32.319
2001	13	11	35.977		32	34.234
2002	16	16	43.028		23	40.100
2003	15	14	57.225		31	53.337
2004	22	21	70.055		18	70.878
2005	13	13	95.223		29	80.226
2006	19	19	101.195		23	89.461
2007	6	6	111.250		23	93.998

Gresham area, Middlesbrough

1_ RESULTS

Year	Project Area			Comparative Area		
	Total Transactions	Considered Transactions	Average Price	Total Transactions	Considered Transactions	Average Price
2000	8	8	16.225	12	12	17.911
2001	16	16	18.781	27	27	17.311
2002	20	20	21.215	20	19	19.684
2003	25	23	23.680	21	21	24.555
2004	27	27	40.094	40	40	39.190
2005	29	29	49.061	49	48	48.566
2006	28	28	62.555	42	42	58.933
2007	18	18	68.597	25	23	70.476